

Student Name:

Student Number:

Project 4

Project 4: Deep Learning for Classification

A. What to DO:

- 1) Prepare Dataset:
 - Download the training and test images from D2L. Image labels are given in the file names.
For example:
Label 0 : IDRiD_118_**-0**.jpg
Label 3 : IDRiD_001_**-3**.jpg
 - Separate images in train and test into two groups as DR and nonDR:
 - o NonDR : Label 0
 - o DR : Label 3 & Label 4
- 2) Download a Pretrained CNN such as AlexNet, GoogLeNet, VGG, or ResNet50.
- 3) Retrain your CNN using transfer learning for DR and nonDR for different learning rates, minibatch size, and max-epoch. Also, you can try using different augmentation such as 'RandXReflection', 'RandXTranslation', 'RandYTranslation'.
- 4) Test your retrained CNN with test images and record your accuracy and options you selected on a table.
- 5) Show the confusion matrix of your best result.

B. What to turn in:

- A zip file with all the necessary SOURCE code
- a written report (in pdf format) including the following contents.
 - o Cover page with your name, class title, class number, date, etc.
 - o Abstract (no more than 300 words) summarizing what this project is about (objective), what you did, and what you find out.
 - o Result section that lists both the original image and the output image of the special effect. Make sure that there's caption to the figure and that parameter used that generate the result are elaborated in the caption.
 - o Discussion section summarizing lessons learned, your experience working on the project, potential future work if given time, etc. Note that this should be a short paragraph, no more than 300 words.
 - o Source code printout.
- Upload the zip file and project report to D2L as separate files.

C. Due Date: It is announced on D2L.

